

PROPOSED CLASSIFICATION  
OF  
THE SMALLER INDIAN FIELD (OR JUNGLE) MICE.

BY

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The late Mr. Thomas when dealing generally with the Indian Mice (*J.B.N.H.S.*, xxii, p. 682, 1914), definitely separated the field from the house mice, and established a new genus *Leggadilla* in which he included some of the larger forms, and kept the genus *Leggada* to cover the remainder, but still left unsettled a very large number of the smaller forms, grouping them under the specific name 'booduga'.

The material available for study is now very considerable as specimens have been obtained by the Survey from many different parts of India and Ceylon. Burmah is less well represented as, with few exceptions, specimens from the region of Mt. Popa alone have been obtained. The object of the work now undertaken is to complete as well as may be that part of the classification of the smaller field-mice which Mr. Thomas left in abeyance, by admitting that earlier writers on the subject were fully justified in giving specific names to the comparatively few specimens they had to deal with, but which they knew were caught in widely separated parts of India, and might therefore reasonably be considered definitely different animals. In the first place it may be stated that all of these smaller field-mice, measuring say head and body some 75 mms. or less, with hind foot of 15 mms. or less and with a 10 mammæ formula, have a strong family likeness, no matter where they come from; and it is practically impossible to distinguish them by skull measurements, since though certain differences in size and shape may be apparent, yet they are confined within such small limits that they cannot be accepted as of specific value; consequently, strictly speaking, these mice should be separated on a sub-specific basis only. This, however, cannot well be accurately done owing to the difficulty in determining whence the species arose; whether for instance the animal first appeared in the north of India and spread southward or *vice versa*—hence there seems no valid reason for taking any particular recorded name as a specific one. It is true that *Mus (Leggada) booduga*, Gray. Charlesworth's *Mag. Nat. Hist.*, I, p. 586, 1837, appears to be the oldest name available and was adopted by Blandford and others, further, it is certain that the type made by Gray came from Southern India, very probably from Dharwar; on the other hand, the name *cervicolor* was assigned by Hodgson to a mouse presumably taken in Nepal in 1845. (*Mus (Leggada) cervicolor*, Hodgson, *A.M.N.H.*, xv, p. 268, 1845). These two mice, named quite independently, one from the South, the other from the North of India differ appreciably in general outward appearance and somewhat in size, also the skull of the

former appears on an average to be smaller than that of the latter, yet which of the two, if either, should be accepted as typical of the species can only be a mere matter of opinion. At a date later than 1918, Mr. Thomas adopted the name *Leggada cervicolor*, Hodgs. for some mice collected in Nepal by Baptista thereby reversing his former view that *cervicolor* should be recognized as a synonym of *booduga*; accordingly it is now proposed to follow this procedure, and accept other specific names given by various authors, ignoring the fact that the field-mice from say Bengal are possibly of the same species as those found in Dharwar or elsewhere, but recognizing that owing to differences of climate, elevation and general environment, some slight but permanent modifications in colour and size have occurred, sufficiently noticeable to justify the adoption of different specific names for different local races.

The names, some of which it is proposed to utilize, are shown in Blandford's *Mammalia*, p. 416, as synonyms of *Mus booduga* and again in Wroughton's Summary under *Leggada*, *J.B.N.H.S.*, xxvi, No. 4, p. 959, 1920. General colour and average size in millimetres are shown under each heading.

#### DISTRIBUTION.

##### 1. LEGGADA CERVICOLOR, Hodgs.

H & B. 66; T. 72; Hf. 18; E. 14.5.

Colour above, pale sandy brown, below, isabelline, fur rather long and somewhat woolly, dividing line not clearly defined.

Four specimens collected by Baptista in Nepal were found by Mr. Thomas to agree with a lectotype of Hodgson's *Mus cervicolor* and were recorded in Report No. 37, *J.B.N.H.S.*, xxix, No. 2, p. 422, 1923, under this name. No precisely similar specimens have been received from any other district, and therefore for the present the name applies only to the small field-mice of Nepal.

##### 2. LEGGADA TERRICOLOR, Blyth.

H & B. 61; T. 58; Hf. 14; E. 11.

Colour above, dull earthy brown, below, white to isabelline, dividing line well marked in white bellied specimens, less so in those with isabelline bellies.

This name appears to be applicable to the lesser field-mice found in the following districts:—Bengal (the type locality) Bhutan Duars, Central Provinces, Gwalior, Berar and Nimar, and of these the fifty-eight specimens obtained by the Mammal Survey from Bengal may be considered as topotypical since the name was given by Blyth to specimens taken south of, and in the neighbourhood of Calcutta and also from Midnapur; moreover he noted it as the commonest field-mouse in Lower Bengal, and as being very abundant in the Santal Districts west of Midnapur. The area concerned is a very wide one, and conditions must vary considerably,

still the general appearance, size and colour both above and below, of the mice from all these localities is so similar, that it seems unwise to attempt any further differentiation. Blyth (*J.A.S.*, xxviii, p. 296) gave the name *tytleri* to a mouse from Dehra Dun but the description tallies closely with that of *cervicolor* and possibly was identical with it; in any case the name does not seem suitable for the Kumaon specimens as they resemble those from N.W. Punjab much more closely than those from Nepal.

The difference between the 'earthy' brown colouring of *L. terricolor* and the 'sandy' brown of *L. cervicolor* is strongly marked, and in addition the fur of the former is much closer in texture than that of the latter which is made up of longish more or less woolly hair.

### 3. LEGGADA DUNNI, Wroughton.

H & B. 63; T. 61; Hf. 13; E. 11.

Colour above, drab, below, white to pale isabelline, dividing line usually clearly defined. Fur short close.

*Mus (Leggada) dunni* was separated from *booduga* by Wroughton in 1912—*vide J.B.N.H.S.*, xxi, p. 339. In Report No. 2, a single specimen obtained in Cutch by Crump was shown as *dunni* while in Reports Nos. 10 & 12 Kathiawar and Palanpur respectively, Wroughton observed that mice found in the open country showed the characteristics of *dunni* while those from hilly wooded country resembled *booduga*, consequently he recorded some under the one head, some under the other. The slightly darker hue of the upper coat, and the tendency towards pale isabelline, as opposed to pure white, below is clearly noticeable in some of the hill specimens from Kathiawar and Palanpur, but in no other respect is any difference apparent; therefore it seems reasonable and desirable to include all the small field-mice under one name. The type locality of *dunni* is N.W. Punjab, and the mice from Kumaon and Kangra Valley must also be placed in this category, although those from the latter are a trifle darker in colour both above and below.

### 4. LEGGADA NAGARUM, Thomas.

H & B. 75.5; T. 62; Hf. 14; E. 13.

Colour above, darkish brown, below, dark grey, fur moderately long, dividing line more or less indistinct.

Passing eastward again to Assam, further study of the specimens from this district which were classed as *L. booduga* in Report No. 41, has led to the conclusion that they should rightly be relegated to the above-named species, the type locality of which is the Naga Hills. Why these mice were not correctly named in the first instance is something of a mystery, since had they been carefully compared with the specimens named by Thomas, no doubt as to their identity could have arisen; probably the mistake occurred simply because at the time the Report was written the habit of calling all the small Indian field-mice *booduga* was then in vogue, and no comparison was made,

## 5. LEGGADA BOODUGA, Grey.

H &amp; B. 62; T. 57; Hf. 14; E. 12.

Colour above, fawn to light or darkish brown; below from pure white to pale or even darkish isabelline, varying according to local conditions, dividing line also varies in distinctness according to the hue of the under parts.

This name appears to be applicable, with a few exceptions, to all the small field-mice, i.e., with H. & B. of 75 mms. or less, found within the limits of Khandesh on the north, to Cape Comorin in the south; the exceptions being some specimens obtained by the Survey in Madura, Coimbatore and the Eastern Ghats.

Those found on the hilly forest-clad country of the Western Ghats differ to some extent in size, and colouration both above and below, from those coming from the plains of Dharwar, Coorg, etc., but these differences do not seem sufficiently pronounced to justify any splitting into sub-species. Moreover the variations can no doubt be fairly attributed to changes of environment, such as elevation, rainfall, soil, tree-growth, etc.

Specimens originally reported as *L. booduga*, and for which that name is still retained, were obtained by the Mammal Survey from Khandesh, Poona (including ghat country), Ratnagiri (Koyna Valley), Dharwar (presumably the type locality of *booduga*), Kanara, Mysore and Coorg. Skulls of specimens from the above-mentioned districts compared with typical Dharwar skulls (Dharwar being accepted as the type locality of *booduga*) showed only very slight differences in size and shape, thus furnishing additional justification for grouping them all under the one head.

## 6. LEGGADA PALNICA, Thomas.

H &amp; B. 73; T. 66; Hf. 15; E. 13.

Colour above, darkish brown, below pale grey; dividing line not very clearly defined.

Eleven specimens obtained in Travancore were originally reported as *booduga* and the justification for using this name lay in the fact that their average size agreed more or less with that of some Deccan specimens; but closer examination shows that probably they are all rather immature, while their skulls are considerably larger than those of true *booduga*; again the slight differences from typical *palnica* in colour and texture of fur may be due to environment or seasonal causes; these considerations lead to the conclusion that they must be reclassified as *Leggada palnica*.

## 6. LEGGADA LEPIDA, Elliot.

H &amp; B. 67; T. 58; Hf. 15; E. 12.

Colour above, light sandy or fawn with a slight reddish tinge, a faint dark line down the back; below, white or pale isabelline, a small white mark below the ear, dividing line usually sharply defined.

The exceptions noted under *L. booduga* include specimens from Coimbatore (type locality) 5, Cape Comorin 4, Madura (High Wavy Mt.) 6, Eastern Ghats 35 and Bellary 18; of these the last two show only a mere trace of the white marking below the ear, but are otherwise similar to the two former, while all of them are clearly different from '*booduga*'; in connection with this white mark it should also be mentioned that most of the Eastern Ghats specimens are obviously immature.

The British Museum possesses no named specimens of *Mus (Leggada) lepidus*, nor again are there any authentic specimens in the Madras Museum; consequently direct comparison not being possible, identification depends entirely on Elliot's description, which is somewhat vague (*Mus lepidus*, Elliot, Madras *Journal L. Sc.*, x, p. 216); still in some essential points the Survey specimens appear to agree with it very closely. Although Elliot made no mention of the ear-mark noted above which is a very noticeable feature in the specimens from Coimbatore and Cape Comorin, yet this discrepancy in the description of '*lepidus*' may well have been due to the non-existence, or very slight trace of, the mark in the specimens dealt with by Elliot. The type of *lepidus* is only known to have come from S. India, the exact locality not being recorded, so quite possibly it may have been taken in the Madura district where for some local reason this ear-mark may not have been developed; at any rate in the Survey specimens the mark is barely traceable. Blyth, it is true, considered *lepidus* to be a synonym of *booduga*, but he may have based his opinion on size alone, disregarding the question of colour and the delicacy of the limbs, two well defined distinguishing features.

#### 7. *MUS (LEGGADA) FULVIDIVENTRIS*, Blyth.

H & B. 68; T. 65; Hf. 15; E. 11.5.

Colour above, darkish brown, fur short, smooth; below, mostly pale isabelline or even white, dividing line varies from sharp to moderately well defined according to the colour of the under parts.

Blyth described under this name (*J.A.S.B.*, xxi, p. 351, 1852) a mouse from Trincomali, N.E. coast of Ceylon, as affined to *Mus terricolor* except that it was larger and generally greyer or less fulvescent, and gave the length (H. and B.) as about two and three quarter inches and tail two and a half inches. The specimens obtained in Ceylon by Major Mayor, for which it is proposed to adopt the name *fulvidiventris* cannot be compared with Elliot's type as it is not in the British Museum Collection, but they tally with his description quite well both in respect to size and colour. The Survey specimens from Ceylon are somewhat larger, and differ appreciably in colour and texture of fur from typical *L. booduga* or *terricolor*, and assuming them to represent Blyth's mouse it would seem that he was fully justified in giving another name to his mouse from Trincomali, and further that in the present reclassification the adoption of his name, *fulvidiventris*, for the Ceylon field-mice, as a whole, appears to be equally well justified.

## 8. LEGGADA LEPIDOIDES, sp.n.

H &amp; B. 69; T. 52; Hf. 14; E. 11.5.

Colour above, rather variable, some specimens being darkish brown on the back tending to a greyish brown on the sides and flanks, while others are paler with an ochraceous tinge; below, usually pure white, in some cases deepening to a very pale isabelline, dividing line well defined.

Looked at from above there is a marked resemblance to *L. terri-color* from the Duars, but the latter are invariably of much darker hue below. The reason for linking these mice from Mt. Popa with *L. lepida* from Madras lies in the fact that both of them have a small white spot below the ear. This mark is not quite so fully developed in the Burmese mice as in those of Madras, sometimes being only just visible; the character may not be an important one in itself, but it suffices to establish a sort of relationship between the field-mice of these widely separated areas. Moreover they do not differ greatly in average size, either in bodily or skull measurements:—in fact the Burmese skulls are practically indistinguishable from those of *L. lepida*, or *L. booduga*, therefore it is unnecessary to give actual dimensions. Whether the ear-mark arises from some similarity of local conditions in the two countries is a matter for conjecture, but the fact remains that it is only in specimens from these two regions that this peculiarity appears to be found.

Two *Leggadas* from Burmah have been described, one from the Salween Valley by Peters (*L. beavani*, *P.Z.S.*, p. 559, 1866), the other by Anderson from the Kakhyen Hills (*Mus Leggada kakhyensis* or *viculorum* (*Zool. Yunn.* pp. 107, 108, 1878); but in neither case do they appear to represent the Mt. Popa specimens collected by Shortridge, either in general measurements or in colour, consequently it became necessary to rule out these names and establish a new species.